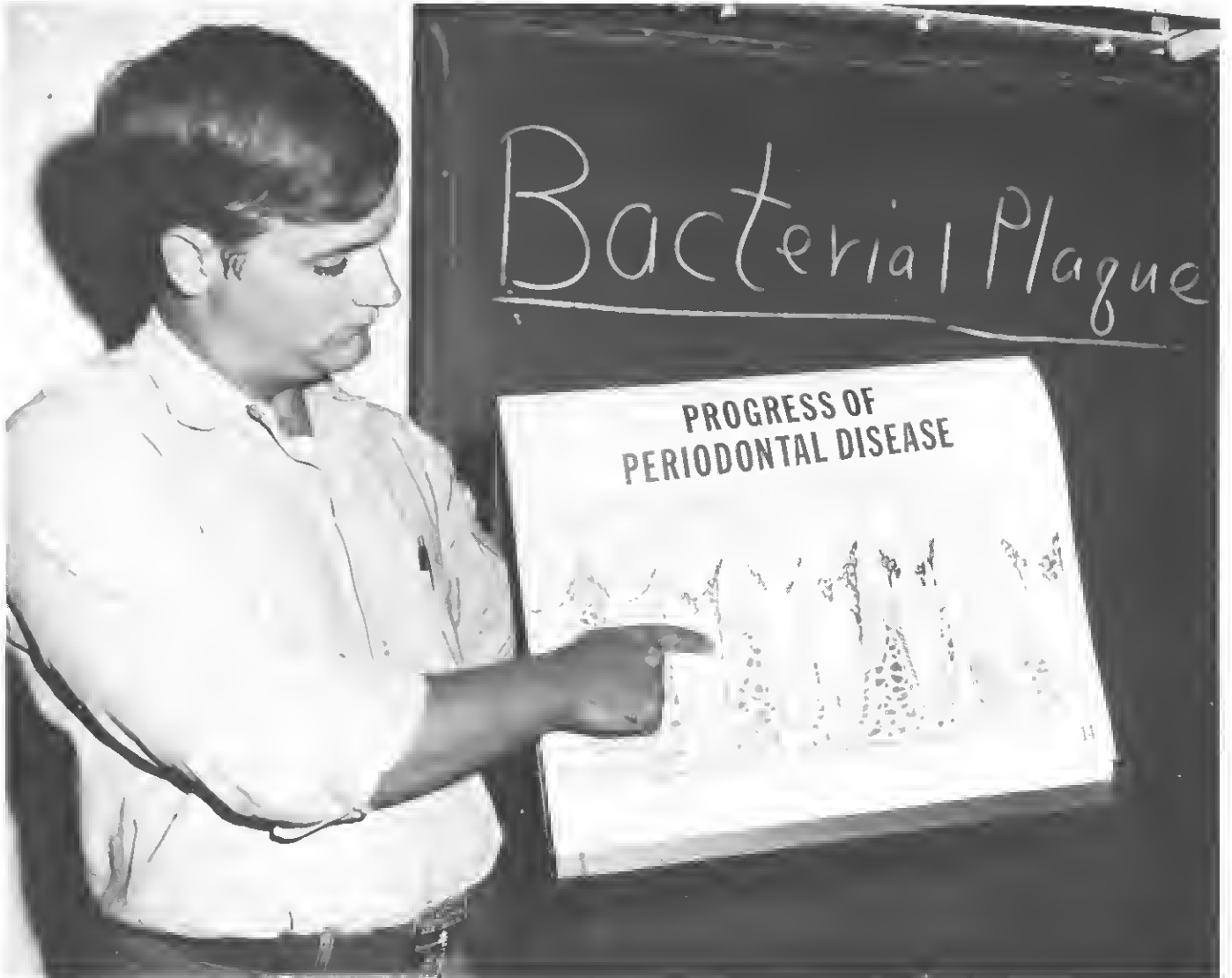




U. S.
NAVY

Medicine



January 1972

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The issuance of this publication approved in accordance with NAVEXOS P-35.

NAVMED P-50BB

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Credits: All pictures are Official U.S. Navy photographs unless otherwise indicated.

The front cover photograph was submitted by the USS LEXINGTON (CVT-16), NAS Pensacola, Fla., where DT3 Word, USN is shown lecturing to newly reported personnel. Attention is invited to the report on the dynamic program which the LEXINGTON Dental Department has instituted, pages 24 to 28.

Page 2 photo reveals VADM George M. Davis, MC, USN, Surgeon General, viewing films of bronchography study at Naval Hospital Camp Pendleton, Calif. (Picture taken by HM1 Villaroman, Jr., USN, appears here through the courtesy of THE PULSE BEAT, Naval Hospital, Camp Pendleton.)

Technical support in graphic arts rendered by Mrs. S.B. Hannan, Code 4542, BUMED, is gratefully acknowledged.



from the Chief

In the dawn of a new calendar year we might profitably check the vital signs and evaluate the present condition of the Navy Medical Department. I speak briefly in the most general terms because we are concerned with a world-wide system of 85 major and 1,100 accessory medical facilities staffed with some 56,000 personnel.

Significant prevailing trends have had a direct bearing on current efforts. Included among these influential factors are: the greater use of outpatient services, the decreasing Navy population, diminished levels of funding, the national shortage of health manpower, contemporary unpopularity of military service, the thrust for an all-volunteer military force, increasing costs, expanding knowledge and technology, mounting consumer demands and increased requirements for medical funds.

The thrust of necessary change will be directed toward the evolution of a smaller high quality medical system with concentration upon continued education, more stabilized assignments, elimination of unnecessary positions, regionalization of resources, provision of attractive facilities with modern equipment and ever increasing attention to the development of highly competitive specialized training. Let us review some of the developments occurring in three general areas of consideration: clinical, professional, and administrative.

Within the clinical area we are taking steps to streamline operations which already exist. Additional resources are also being acquired. Construction of new facilities is now proceeding at a substantial pace both ashore and afloat. Increased numbers of examining rooms and waiting areas, and Family Practice Clinics in accordance with the American Academy of General Practice guidelines are being introduced.

Automated testing and screening devices will help to accommodate the growth in outpatient services. Successful testing of the computerized problem oriented record system (a modified version of Dr. Weed's system) at Brunswick, Maine, has led to its further development through Navy computer systems at Pensacola, Florida. Hopefully the system will be implemented at one of our large naval hospitals in the near future. A new dictating and transcribing system for outpatient medical records has been favorably tested at Bremerton Naval Hospital. An outgrowth of the cooperative effort developed between the Naval Electronic Laboratory Center and the Naval Hospital, San Diego, is the computer-assisted interpretation of electrocardiograms. At the Naval Hospital, Bethesda, a prototype, computer-assisted laboratory information system, to serve both inpatients and outpatients, is being formed. A long-range objective is to provide electronic service to remote users on a regional basis. Based on evaluation of this prototype, future procurement of laboratory information systems is planned for 14 additional naval health care facilities.

The Clinical Investigation Program (CIP) became operational on 1 July 1971. This allows us to single out clinical investigation as a line item under M&O funds and lifts the restraint on research for military purposes only. The CIP represents a great step forward in the support of our training and treatment efforts.

We are interested in various plans of civilianization and as we diminish forces it is evident that CHAMPUS will be extended. Increased emphasis is being placed upon preventive medicine and our Dental Corps has been an outstanding leader in this. We are exerting appropriate energy to communicate with and educate our patients to a better understanding of the most efficient method of utilizing our services.

The first part of this review has concentrated on representative developments within the immediate clinical area. Next month the review will be extended to consider other fundamental areas of personnel and administration.



Foveomacular Retinitis In Military Personnel

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Research was performed through and with the cooperation of the Clinical Investigation Center, San Diego, Calif., CDR J.E. Lang, MC, USN, Director, and the Naval Biomedical Research Laboratory, Oakland, Calif.

Supported by the Bureau of Medicine and Surgery, Department of the Navy under Work Unit M4305.05-3064AGG2 and N00014-69-A-0200-1001.

Introduction

Foveomacular retinitis is a term introduced by Cordes to describe an eye disease first noted in naval personnel during World War II; subjectively there was a loss of central vision, sometimes bilaterally. Objective findings were limited to the macular area where an initial lesion subsequently developed into a foveal hole. The etiology of the disease was not determined.

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The opinions or assertions contained herein are those of the authors and are not to be construed as official or reflecting the views of the Department of the Navy or the naval service at large.

Since that time the existence of foveomacular retinitis as a distinct clinical entity has been in doubt. The true character of the disease and its etiology have been the subject of articles in the medical literature and the lay press.

It is the purpose of this paper to review the history of this disease, report the presenting symptoms and ocular signs, and discuss the protocol of an ongoing study of the condition at the Naval Hospital, San Diego, Calif.

History

Dr. Cordes

World War II had barely begun when Navy ophthalmologists noted an increasing number of cases presenting with decreased central vision associated with a central retinitis. In 1943 Dr. F.C. Cordes, at the request of the Subcommittee on Ophthalmology of the National Research Council, undertook a study of this condition. He gathered data on 176 cases from eleven ophthalmologists serving Navy and Marine Corps personnel and personally examined some of the case material. A preliminary report was published in 1944.¹

The term foveomacular retinitis was used by Cordes to describe the disease which started as a macular edema with a loss of foveal reflex and later developed into a foveal hole or cyst. The condition was bilateral in 30% of the cases with the second eye becoming involved after the first had healed. Most eyes recovered with 20/20 or 20/25 vision, although vision was 5/200 in some cases. The average age of the patients was 23 years and most were personnel serving in the Hawaiian Islands or the Pacific combat zone. However, some cases were recorded in recruit training stations, enlistment centers, submarine crewmen and personnel who had served only in the continental United States. Detailed physical examination of the patients failed to reveal any other common findings in a significant percentage of the cases.

Only two etiologic factors were given serious consideration: solar retinitis and angiospastic retinopathy. Since submarine crewmen had been seen with the disease and since they went long periods of time without exposure to the sun, solar retinitis was ruled out as a probable cause of foveomacular retinitis. Cordes noted the similarity, clinically, between foveomacular retinitis and central angiospastic retinopathy. He concluded that further study of the etiology of foveomacular retinitis, giving special consideration to possible peripheral vascular disease and angiospasm, was justified.

Subsequent Reports

That there was not unanimous agreement on many important features of foveomacular retinitis among the contributors becomes evident on reading the report. Three of the contributors, Borley, McAlister and Lower, in 1945² reported 31 cases under the heading "Central Macular Chorioretinitis" and offered the results of animal experiments as suggestive of — but not conclusive for — an infectious etiology for this condition.

Harrington,³ another contributor, in 1946 reported a study of 40 cases under the diagnosis of central angiospastic retinopathy, concluding that this was the proper diagnosis for foveomacular retinitis. Harrington felt that the etiology was a vasomotor disturbance initiated by psychic trauma, fatigue, or the increased use of tobacco in an autonomically unstable individual. Zelig,⁴ in a simultaneous but independent study of naval personnel, supported the psychosomatic aspects of the condition.

If the Korean conflict caused an increased number of cases of foveomacular retinitis, it is not reflected in case reports in the ophthalmic literature or in admissions to the Naval Hospital, San Diego, Calif. The term foveomacular retinitis appears rarely in the

literature of the 1950's and early 1960's and then, only as a synonym for central angiospastic retinopathy or central serous retinopathy.^{5,6,7}

Revival of Interest in 1966

The condition foveomacular retinitis, as a distinct clinical entity, was revived by Kerr and Little⁸ in 1966. They reported findings in 18 cases seen at the Naval Hospital, San Diego, during the period from January 1964, to January 1966. The patients were all enlisted males except for one male officer and two teen-aged military dependents (one female). All had bilateral involvement. On examination of the eyes, the findings were limited to the macular area. There was an initial loss of the foveal reflex with subsequent development of a yellow foveal exudate, situated deep within the retina or possibly the choroid. Around the exudate was a zone of parafoveal edema. After 10 to 14 days the exudate disappeared and the formation of a foveal hole was noted in 31 of the 36 affected eyes. General physical examination findings were normal as were the results of most laboratory tests. Thymol turbidity and cephalin flocculation tests were abnormal in some, but not in all of the patients. The visual outcome was poor.

On the basis of their findings, Kerr and Little differentiated foveomacular retinitis from central serous retinopathy (and thus, central angiospastic retinopathy), and felt it to be a distinct entity. Etiology was not determined.

Cases of this disease continued to be seen at the Naval Hospital, San Diego, and in 1968 Nail,⁹ an Epidemiologist with Navy Preventive Medicine Unit No. 5, investigated 13 patients with the disease. A number of factors were explored and the possibility that cholera immunization, common to all 13 patients, might be an etiologic factor was noted. The cholera immunization schedule for Marine recruits was altered without any apparent effect on the occurrence of foveomacular retinitis cases. Nail concluded that while there are probably multiple causes for the condition a psychophysiological reaction to stress was the predominant factor.

Also in 1968, Lazar,¹⁰ a Red Cross social worker at the Naval Hospital, San Diego, was requested to gather background social and medical histories on 14 patients. This information was collected by personal interview with the next of kin, usually the patient's mother. She concluded that "there were no apparent social or medical factors contributing to the unusual circumstances surrounding this malady."

Ford,¹¹ a psychiatrist at the Naval Hospital San Diego, studied patients admitted with foveomacular

retinitis in the spring of 1969. Fourteen of these cases were Marine recruits. He, therefore, chose 14 Marine recruits from the infectious disease ward of the hospital as a control group to examine the role of anxiety as an etiologic factor. From this controlled study, Ford reported that there were no significant differences between cases and controls with respect to age, education, family social status, school marks, history of antisocial behavior, ordinal position in family or family stability. Also, there were no significant differences in history of psychosomatic illness or symptoms. Results of psychological test data revealed no significant differences in the groups. He concluded that his findings did not support the hypothesis that psychological disturbance is a prime etiologic factor in foveomacular retinitis. He did note a significant difference in the findings: among the cases, more had a recent history of surgical procedures, recent fracture or recent marked weight loss than did the controls. He, therefore, regarded metabolic changes associated with physical stress as factors precipitating the disease.

Current Reports

The first reported cases of foveomacular retinitis from another branch of the Armed Forces appeared in 1969 when Young¹² published data on Army cases from Europe. Ewald and Ritchey¹³ followed, in 1970, with a report of 47 patients seen at Fort Ord, Calif., in 1967-1969. All were active duty enlisted personnel, except for one adolescent female military dependent. Whereas, Young was unable to determine etiology, Ewald and Ritchey were able to obtain admissions of sun-gazing in 24 out of the 35 (69%) specifically questioned about this activity. The lesion described by Ewald and Ritchey was identical to the one described by Kerr and Little.⁸ Additionally, Ewald and Ritchey found the lesion in the macula to be similar in cases where sun-gazing was not admitted by the patient. Invoking the doctrine of "*res ipsa loquitur*," all cases were considered to have been caused by sun-gazing. Nine of these patients associated sun-gazing directly, or indirectly, with the use of drugs. The remaining admitted sun-gazers were motivated to do so by desires for a change to noncombat duty or discharge from the service. Thus, the authors concluded that foveomacular retinitis did not exist as a distinct entity but represented a "solar burn of the fovea, self-inflicted for the purpose of secondary gain or associated with the use of drugs."

The possibility of self-inflicted injury to avoid military duty was the subject of articles in a popular medical journal, the press and on television. A conference sponsored by the Army, Department of Preventative

Medicine, was held in October, 1970, in Washington, D.C. Findings in foveomacular retinitis were generally discussed, with emphasis on the incidence, cause, prevention, and treatment. No conclusions were reached by those attending the meeting. It was agreed that further epidemiological work was required.

Symptoms

Cordes reported that the patients had a rather unusual type of headache. They described a pain in the back of the eye usually associated with a "boring" type of headache on the side of the lesion. The headaches in some cases persisted three to four months and were increased in bright light and heat. Some of Cordes' team noted that the pain was in the eye itself, bilaterally, and in the frontal or orbital region. Photophobia was stressed by four of the examiners. Kerr and Little,⁸ and Ewald and Ritchey¹³ reported in addition the subjective complaints of metamorphopsia, impaired vision and chromatopsia.

Ocular Signs

The visual acuity during the acute stage varied a great deal depending upon the degree of foveal involvement and has been reported by Cordes¹ to vary from 5/200 to 20/20. In some cases the vision returned to 20/20 (eccentric fixation).² Perimetry showed the changes to be limited to the central area with an average central scotoma reported by Cordes to lie between 0.5 and 3 degrees.

The pathologic changes are limited to the fovea and the surrounding area. The examiners (Cordes) varied in their description of the changes. In the earlier stages there is edema with absence of foveal reflex (Lees' "preretinal wheel") which is described by others (Harrington) as a fovea with a "smudged-over" appearance. Borley describes the early stage as a small round gray infiltrate at the fovea. (See Figure 1) Lucic stated that at first there is a disturbance of the pigment characterized by a fine granular stippling in the macula. Surrounding the fovea is a "bright circle" of almost one disc diameter (Harrington) which becomes a red ring by the end of the fifth or seventh day (Borley). In a matter of four weeks the perifovea develops a fine dustlike pigment mottling. The final picture is that of an irregular pink or grayish-pink hole-like lesion in the fovea surrounded by an area of heaped-up pigment (Lucic). (See Figure 2) In some cases there is a coalescence of the honeycombed appearance to form a rather typical hole in the macula (Lees, Borley). (See Figure 3) Kerr and Little,⁸ and Ewald and Ritchey¹³ have also found the yellow foveal exudate, as well as the other findings described

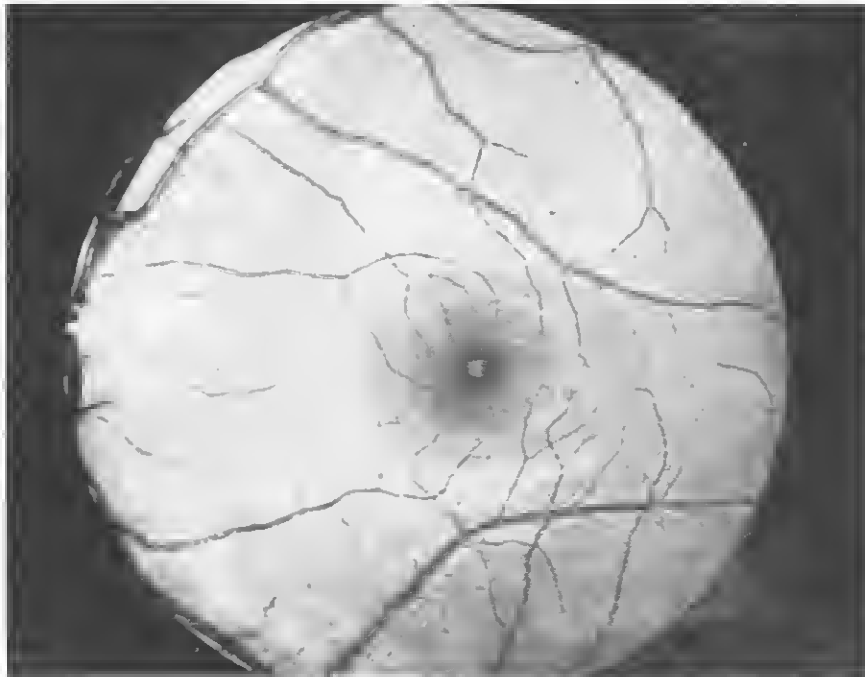


Figure 1. Early stage of Foveomacular Retinitis.
Note small round infiltrate at the fovea.

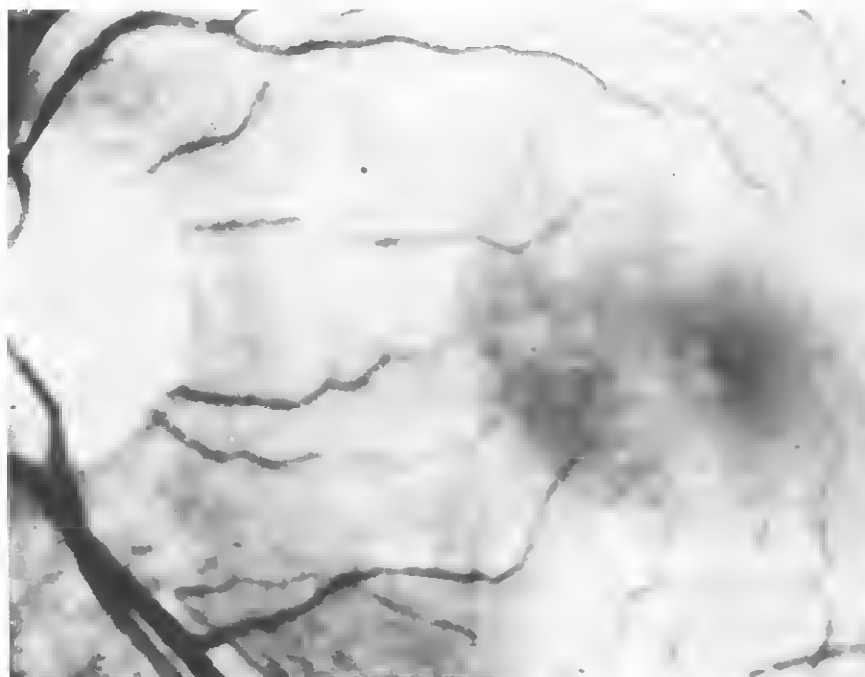


Figure 2. Final picture with irregular pink or
grayish-pink holelike lesion in the fovea.

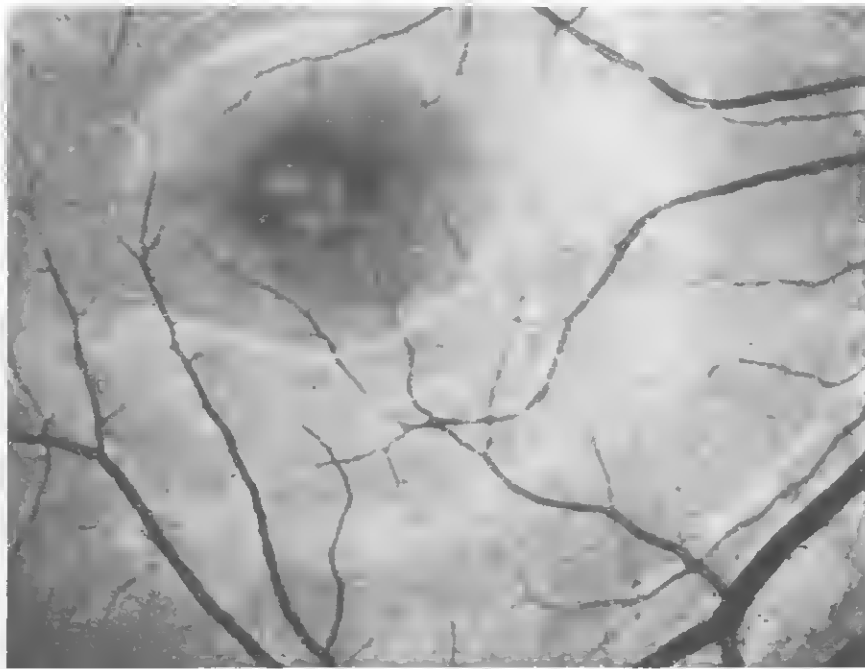


Figure 3. Final picture with coalescence of the degeneration of the retina and pigment epithelium in the macula.

by Cordes and his associates.

The Present Study

In May, 1969, the Ophthalmology Department, Naval Hospital, San Diego, reported to the Bureau of Medicine and Surgery (BUMED), Navy Department that over 100 cases of foveomacular retinitis had been admitted during the preceding year. BUMED personnel had also noted this increase reflected in the number of cases reviewed in which this disease led to the finding of unfitness for duty. The increased occurrence, mainly in Marine recruits, appeared to be limited to the San Diego area.

A detailed study of foveomacular retinitis was proposed to BUMED by the Naval Hospital, San Diego. The study was to be a joint effort of the Naval Hospital Ophthalmology Department and the Naval Biomedical Research Laboratory, School of Public Health, University of California, Berkeley. The proposed study was approved and funded in May, 1970.

Study Design

At the time the study was proposed, the findings of Nail,⁹ Ford,¹¹ and Ewald and Ritchey,¹³ although not published, were known to the investigators. With their findings in mind, a program of three phases was designed. The first two phases of the project were designed to describe the outbreak of foveomacular

retinitis in terms of its overall incidence and major demographic characteristics and to suggest hypotheses for testing in the third phase, a case-control study.

Phase One

Hospital records of patients admitted to naval hospitals located in Southern California (San Diego and Camp Pendleton), the Middle West (Great Lakes, Ill.) and Southern United States (Beaufort, S.C.) during the period 1 January 1965 to 31 December 1969 with a diagnosis of macular degeneration, retinal inflammation or blindness, were reviewed by the investigators. Those cases having the characteristic history and physical findings outlined by Kerr and Little⁸ were included in the study regardless of recorded diagnosis.

The hospitals involved in this study were chosen not only because of the geographic separation, but also because they provide medical care for recruits.

Phase Two

A detailed descriptive study was made of cases diagnosed as foveomacular retinitis with onset of symptoms during the period 1 January 1968 to 31 December 1969, admitted to the Naval Hospital, San Diego. Individual hospital inpatient records, health records and military service records were reviewed in order to collect information as to personal history, family history, past medical history, present illness, disposition

and follow-up after hospital discharge. It is to be noted that this time period, at this hospital, includes all of the cases described by Nail⁹ and Ford.¹¹

Phase Three

Naval Hospital, San Diego, Calif., has been designated as the Foveomacular Retinitis Center for all acute cases. All admissions will be given an intensive and thorough ocular examination including photography, fluorescein angiography, static and kinetic perimetry, dark adaptometry, color vision, and visual dazzle test. A case control study will be performed in order to test the suggested hypothesis of Phases I and II.

Progress

Data collection for Phases I and II has now been completed except for the follow-up information. Analysis of data on hand is near completion and the preliminary findings will be the subject of separate report.

Discussion

Foveomacular retinitis, in the space of about 25 years, has been a very controversial condition. At first a disease of naval personnel, it is now recognized as a disease of military personnel. At first thought to be associated with psychic trauma, it is now considered to be either self-inflicted or the result of physical stress. Its existence as a distinct entity is still in doubt and its etiology in question.

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APPOINTMENT FOR CAPT NOLAN

CAPT Robert L. Nolan, MC, USNR-R, has been appointed a member of the National Advisory Council on Health Manpower Shortage Areas by HEW Secretary Richardson. The Council will advise the Secretary on the implementation of the Emergency Health Personnel Act of 1970, Public Law 91-623. Under this legislation a National Health Service Corps has been established to assign doctors, dentists, and other health personnel in the Public Health Service to areas where there are severe health manpower shortages.

Dr. Nolan is Professor and Chairman of Public Health and Preventive Medicine and Professor of Pediatrics at West Virginia University School of Medicine. He is the Navy Commandant's Representative to the West Virginia University Medical Center, Medical Officer at the USN&MCRTC, Wheeling, West Va., and former Commanding Officer of Naval Reserve Medical Company 12-6, Berkeley, Calif. ☛

COMPLETE HEART BLOCK, PROSTHETIC AORTIC VALVE AND PREGNANCY

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This article appeared originally in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 214(5):915, Nov. 2, 1970. It is reprinted here with the kind permission of JAMA and the Cardiology Branch, Naval Hospital, San Diego, Calif.

Introduction

In 1914, Nanta¹ reported the first case of acquired complete heart block in pregnancy and, in 1927, Laubry² reported the first case of congenital complete heart block in pregnancy. Since then numerous cases, both acquired and congenital, have been reported. In 1966, Ueland, *et al*,³ described the first cases of pregnancy occurring in patients with prosthetic aortic valves. Thereafter other reports⁴⁻¹⁵ followed of pregnancy in patients with aortic or mitral prostheses or both. The following is a report of what we believe to be the first successful pregnancy in a patient with both congenital complete heart block and an aortic prosthetic valve.

Report of Case

A 26-year-old Caucasian female was the product of a normal pregnancy and delivery. A heart murmur and a slow heart rate were noted shortly after birth, when an electrocardiogram (ECG) revealed complete heart block. She was asymptomatic until 17 years of age, when she developed shortness of breath and cardiomegaly. When the patient was 20 years old, cardiac catheterization revealed significant aortic insufficiency.

Because the clinical condition began to deteriorate, on January 18, 1966, the diseased aortic valve was replaced with a No. 4 prosthetic McGovern aortic valve. Marked symptomatic improvement resulted.

On November 26, 1968, the patient was found to be completely asymptomatic, with a blood pressure of 160/55 mm. Hg. The cardiac examination revealed only normal poppit sounds of the McGovern valve. An ECG (Figure 1) revealed complete heart block with a heart rate of 38 beats per minute at rest and a rate of 68 beats per minute with exercise. The QRS interval was 0.11 seconds in duration. The chest X-ray was interpreted as normal with the presence of a

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The opinions or assertions contained herein are those of the authors and are not to be construed as official or as reflecting the views of the Navy Department or the naval service at large.



Figure 1. Top: Resting ECG showing heart rate of 38 beats per minute.
Bottom: Exercising ECG showing heart rate of 68 beats per minute.

McGovern valve in the aortic orifice. She was observed at regular intervals with her only medication being Warfarin.

Warfarin was continued until the 26th week of pregnancy in 1969, when the patient was hospitalized to replace warfarin with heparin sodium given subcutaneously (75-100 mg. every eight hours) depending upon the result of Lee-White clotting times. She was discharged to home with the heparin being given by her husband (a Navy corpsman), and with frequent Lee-White clotting times being performed. The pregnancy was uncomplicated and at 40 weeks of gestation she was hospitalized. Heparin was discontinued and labor induced 24 hours later. While the patient was under continual epidural anesthesia, with use of mid forceps a healthy 6-lb., 1 oz. girl with an Apgar score of 9, was delivered. The post-partum course was uncomplicated and treatment with warfarin was resumed four days after delivery. Four months after delivery the patient remains asymptomatic and physical findings, ECG and X-ray of the chest are unchanged. The chest X-ray (Figure 2) reveals a normal size heart with the McGovern valve in the aortic orifice.

Discussion

Despite the rarity of complete heart block or prosthetic heart valves in pregnant women, the excellent results of surgical treatment in patients with congenital



Figure 2. Postpartum X-ray film of chest.

and acquired heart disease will undoubtedly result in an increased frequency of this clinical problem. Obviously this may result in hazards to both the mother and baby. Our case is unique insofar as both entities complicated the case.

With complete heart block the outlook for the mother or fetus is dependent more upon the associated cardiac lesion than the heart block itself. However, slowing or sudden failure of the idioventricular pacemaker may result in syncope, convulsion and death. These episodes are less apt to occur in patients who have a normal QRS duration on the ECG and who exhibit an increase in heart rate with exercise as seen in our patient (Figure 1). Patients with no history of previous Stokes-Adams attacks, as in our case, can be managed expectantly with drugs and pacemaker at bedside. However, those with a history of Stokes-Adams attacks are best managed by insertion of a temporary transvenous pacemaker.

Use of prosthetic valves in the diseased heart has resulted in marked clinical and hemodynamic improvement in the majority of patients as in our case. Nevertheless, certain complications have resulted from their use such as thromboembolism and malfunction of the prosthesis due to thrombus formation, leading to the use of anticoagulants for these patients.

Anticoagulants have been shown to be associated with an increased fetal risk, especially the coumarin types.¹⁶ The latter with their low molecular weight cross the placenta and may result in placental dysfunction and fetal hemorrhage; whereas heparin with its approximate molecular weight of 20,000 does not cross the placenta. Review of the literature reveals that only those patients receiving coumarin-type anticoagulants have had fetal morbidity and mortality. Although some of these patients also received heparin in the latter part of pregnancy, the prior use of coumarin drugs is thought to have been responsible for the fetal mortality and morbidity. Previous recommendations that have been made in the management of pregnant women with prosthetic valves are:

1. Withdraw anticoagulant agents (with an increased risk of maternal thromboembolic phenomena).
2. Continue oral anticoagulants with close control by laboratory determinations performed several times a week (with risk of fetal morbidity and mortality).
3. Substitute heparin therapy for oral agents. (However, because of the need for frequent parenteral administration and the higher cost, this has not had widespread acceptance).

In our case a synthesis of the latter two recommendations was used. Oral warfarin therapy with close laboratory control was used for the first 26 weeks of

gestation, after which warfarin was discontinued and heparin administered subcutaneously by the patient's husband who was a Navy corpsman. The heparin was discontinued 24 hours before delivery. Pregnancy uncomplicated by thromboembolic events or placental dysfunction, and the birth of a normal healthy child, resulted.

Synopsis-Abstract

A case of a successful term pregnancy in a patient with congenital complete heart block and a McGovern prosthetic aortic valve is presented. The anticipated complications and their therapy are discussed from a review of the literature and experience with this case. This is the 24th case of pregnancy and prosthetic heart valve and the first known reported case associated with complete heart block.

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CAPT Tor Richter (left), MC, USN, CO of the Naval Medical Research Institute at NNMC, Bethesda, is shown holding the papers that appointed Donna Martin (right) as an Ensign in the Navy Medical Service Corps (MSC). ENS Martin was the first Navy enlisted woman to be chosen in the in-service selection program for the Health Care Administration section of the MSC. There were 35 MSC in-service selectees this year. ENS Martin is working on a bachelor's degree and is presently a member of the staff at Nav Hosp San Diego, Calif. (Courtesy of PAO, NNMC, Bethesda, Md.)

ENDOGENOUS REINFECTION WITH HERPES SIMPLEX FOLLOWING ADMINISTRATION OF SODIUM DIATRIZOATE USED IN INTRAVENOUS UROGRAPHY

By LCDR David J. Sire, MC, USN, and LCDR C. Robert Charles, MC, USN;
Department of Dermatology, Naval Hospital, Philadelphia, Pa.*

Introduction

Recurrent herpes simplex infection caused by the Herpesvirus hominis is a common dermatologic condition. Approximately 80% of urban people possess demonstrable antibody titers and 80% of the initial infections are subclinical in nature.¹ Herpes simplex is associated with numerous conditions, both systemic (fever, corticosteroids, stress, and menstruation), and local (trauma, surgery, and X-ray therapy). Specific antibodies appear four to ten days after infection and the titers frequently remain high, even in patients who demonstrate recurrent lesions.² Although complement-fixing and neutralizing antibodies are present, there is no apparent correlation with resistance to reinfection.

The mechanism of endogenous reinfection is still cause for debate. Theories that the virus lies dormant in the peripheral nerves, ganglia,³ or salivary glands⁴ have all been proposed.

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The opinions expressed herein are those of the authors and cannot be construed as reflecting the views of the Navy Department or of the naval service at large.

The association of recurrent herpes simplex with the administration of drugs has been reported for ACTH and glucocorticoids. To our knowledge it has not been reported following the administration of sodium diatrizoate (Hypaque Sodium) for intravenous urography. This occurrence is hereby reported in a patient we have recently observed.

Case Report

This 50-year-old Negro male was seen in the Dermatology Service on 9 March 1971 complaining of swelling, tenderness and a vesicular eruption of the upper lip for one day. He stated that he had had an intravenous pyelogram (IVP) on 8 March 1971, which was followed by swelling and tenderness of the parotid glands within three hours and then the swelling of his lip.

The past history was remarkable in that a diagnosis of renal tuberculosis had been made in 1966 when an IVP demonstrated a non-functioning right kidney and caliectasis of the left kidney. Satisfactory therapeutic response to one year of treatment with INH (isoniazid), PAS (para-aminosalicylic acid), streptomycin and pyridoxine was noted. The patient subsequently underwent a right nephro-ureterectomy on 6 November 1966 when the diagnoses of right, chronic pyelonephritis, hydronephrosis and hydroureter were established. Response of the left kidney to the triple therapy was satisfactory and kidney function studies (urinalysis, blood urea nitrogen, serum creatinine and creatinine

clearance) remained normal thereafter. Acid-fast bacilli were not demonstrated by urine culture although chest X-ray films provided radiographic evidence of a primary Ghon lesion, and a strongly positive intermediate strength PPD skin test was reported. Repeat IVPs on 8 January 1969 and 3 December 1969 appeared normal, and the patient exhibited no reaction following the procedures.

He was admitted to the Dermatology Service on 16 March 1970 with a painful vesicular skin eruption along the distribution of the left ophthalmic branch of the trigeminal nerve, associated with conjunctivitis and uveitis. The diagnosis of trigeminal zoster was made. He responded well to systemic steroid therapy, bland compresses locally, topical antibiotics and analgesics. The patient was discharged on 27 March 1970 and the area subsequently healed with hyperpigmentation and scarring. On 13 April 1970 a repeat IVP (the first IVP since December 1969) was performed. Three hours later the patient developed bilateral swelling and tenderness of the parotid glands, in addition to swelling, edema, and a vesicular eruption involving the upper lip. This eruption of the upper lip was controlled by astringent compresses, analgesics and topical antibiotics. The patient then remained well until 8 March 1971 when the same labial eruption recurred within three hours of another IVP (the first since April 1970).

Physical examination revealed a hyperpigmented, scarred area of skin along the distribution of the left ophthalmic branch of the trigeminal nerve. There was marked swelling and tenderness of both parotid glands. On the upper lip there was marked edema and an eruption composed of many small vesicles on erythematous bases, associated with marked serous exudation and crusts. Tzanck preparation made from the vesical bases showed giant mononuclear cells characteristic of viral vesicular disease. Complement-fixing antibodies to herpes simplex were positive in titers of 1:32 on 9 March 1971, and 1:64 on 30 March 1971. Other laboratory tests including CBC (complete blood count), urinalysis, urine culture, blood urea nitrogen, serum glutamic pyruvic transaminase, creatinine, Venereal Disease Research Laboratory test for syphilis, X-ray study of chest and electrocardiogram, were all within normal limits.

Discussion

Excretory urography using intravenously administered iodine-containing opaque material has been utilized since 1923.⁵ More recently, extremely soluble salts of some iodinated organic acids have been developed for use in urography and angiography. These compounds are of very low toxicity. Wolfson et al.⁶ reported an incidence of 0.35% for severe side effects,

and 0.0016% deaths, out of 912,300 doses administered. Among the side effects listed are local pain, swelling, edema, petechiae, and occasionally sloughing at the injection site.⁷ In addition, nausea, vomiting, oliguria⁸ and fibrinogenopenia have been reported. Recently sodium diatrizoate has been associated with parotid swelling and seventh cranial nerve paralysis,⁹ and with bilateral submandibular gland swelling and tenderness.¹⁰ Segall¹¹ reported five patients who developed transient episodes of pallor, dizziness, and sweating following pyelography. Other side effects noted are urticaria, anaphylactic shock, and various cardiovascular reactions including arrhythmias and hypotensive episodes.¹²

Summary

The endogenous reinfection of an individual by herpes simplex virus following two consecutive IVPs using sodium diatrizoate is reported. Sodium diatrizoate has been previously associated with a syndrome of seventh cranial nerve paralysis, and parotid swelling and tenderness; our patient also demonstrated parotid swelling and tenderness.

The only previous reports of endogenous Herpesvirus reinfection following the administration of drugs involved ACTH and glucocorticoids. Since these drugs had been employed as therapy for other medical conditions, their exact role as "triggering factors" is not clear. Our patient was essentially well at the time of his reactions, the urography studies used for diagnostic follow-up rather than therapeutic purposes. Sodium diatrizoate must be added to the list of agents which may reactivate herpes simplex virus in humans, and physicians should be aware of this possibility when administering this substance.

Abstract

The case of a patient, who suffered two attacks of recurrent herpes simplex of the lip following the administration of sodium diatrizoate for intravenous urography, is reported.

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Five televoicewriters are used to record outpatient dictations. Control units are located inside the cabinets.



Dictation of Outpatient Records at Naval Hospital Bremerton

(Photos by HM3 G. A. Wooten, USN)

On 1 June 1971 the Naval Hospital, Bremerton, Washington, began a six-month pilot program to evaluate the concept of dictating and centrally transcribing entries for outpatient treatment records. The project is providing secretarial assistance to physicians in the outpatient clinics.

During the initial phase of the project, 35 dictation stations were installed in clinic offices. A dictation station consists of a beige-colored phone with a five-selector switch which permits the medical officer to dial one of four McGraw-Edison televoicewriter recorders. A fifth televoicewriter is reserved for use solely by the Neuropsychiatric Clinic. Each station is equipped with attendant call, playback and correction capability.

The Outpatient Transcription Pool is located adjacent to the Outpatient Records Branch. Additional equipment installed included a five-selector attendant phone and five McGraw-Edison Secretarial Transcribers.

Civilian positions specifically authorized for the pilot study are:

- (1) GS-6 Supervisor Clerk Dictating Machine Transcriber
- (4) GS-3 Clerk Dictating Machine Transcribers
- (1) GS-3 File Clerk

The Supervisor, Miss Diane Darling, a highly efficient accredited Medical Record technician was responsible for training the four transcribing clerks. Careful selection and training brought the transcription pool to full productivity within a minimal period of time.

During the first month of the study the number of dictated entries per day averaged 100, totaling approximately 11,000 words. Current entries are averaging over 150 per day with a word output exceeding 18,000. In addition, several lengthy consultations and physical examinations are also transcribed.

At the beginning of the project, entries were transcribed onto a 4" x 6" blank form and after signature were stapled to the chart. Stapling proved both time-consuming and often impermanent. The adhesive "peel-back" form now being used is a definite improvement. Each transcribed entry contains:



LT J.R. Steiner, Pilot Project Officer (right) and LCDR W. Scaring, MC, USN, Chief, Outpatient Service (left) inspect Out-patient Dictation equipment.



Miss Darling, Dictation Pool Supervisor, answers the attendant phone; this permits direct communication with the dictating medical officer should he require immediate transcription assistance.



LT J.R. Steiner, MSC, USN (right) and LCDR W. Scaring, MC, USN (center) review a transcribed entry on an outpatient record as Miss Darling, the Clerk Transcription Supervisor (left) looks on.

DOE, Jane E.

04-123-45-6789

10-27-71

10-28-71

This 9-year-old female with a history of mild allergy symptoms in the past has had acute exacerbation of her allergic rhinitis with accompanying cough and occasional plugging of the ears for the last 6 weeks. Approximately 6 weeks ago, the family moved to a new home in the Olalla Valley. At this time also the child acquired a pet goat and 2 horses which lived nearby. She has been

treated for the last 2 weeks with Afrin and Dimetapp with little or no change of symptoms except that she no longer complains of plugging of her ears.

Physical Examination: The tympanic membranes are white and slightly irregular in architecture bilaterally but move well with pneumomassage. The pharynx is negative. The chest is clear. The nasal mucosa is very swollen, congested and red.

Impression: Allergic rhinitis.

Recommendation: 1. Switch from previous medications to Chlor-Trimeton 8 mgs. every 8 hours for 2 weeks. Recheck in 2 weeks
2. Consider desensitization later this winter.

R. A. JONES
Pediatrics
dld

LT MC USNR

(1) Heading (name, social security number, date of dictation and date of transcription); (2) Body (chief complaint, physical examination, diagnosis, treatment or advice given); (3) Signature line (physician's name, clinic and transcription clerk's initials).

Critiques submitted by medical officers revealed that:

(1) Fifty percent of the medical officers dictated entries on 80% or more of their total patients; another 40% of the medical officers dictated entries on 40 to 80% of their patients.

(2) Seventy-five percent of the medical officers expressed the opinion that they would not be able to see as many patients on a daily basis without the dictation system.

(3) Average time to dictate a single entry was 3.2 minutes. Average time to write the same entry was 8.2 minutes.

(4) One hundred percent encouraged continuing the Outpatient Dictation System.

(5) One hundred percent would recommend it for other naval hospitals.

(6) One hundred percent believe all clinics could use the system.

In addition, the most notable advantages of the Outpatient Dictation System listed were: (1) legibility of entries, (2) time saved, (3) neatness and completeness of records. The only negative comment recorded was an occasional time-lag between the dictation of an entry and its subsequent filing in the chart.

Naval Hospital Bremerton's Commanding Officer, CAPT W.T. Lineberry, Jr., MC, USN reported: "The Outpatient Dictation System, by reducing the clerical functions performed by the medical officers, has improved the standard of services we provide our patients."

RADM H.S. Etter, MC, USN, Assistant Chief for Planning and Logistics (BUMED Code 4) and Mr. Warren F. Showalter, the BUMED Project Officer (Code 441) visited Naval Hospital Bremerton recently to view the pilot project in operation. Local Project Officer for the Outpatient Dictation System at Bremerton is LT J.R. Steiner, MSC, USN. ☞

THE HEMATOLOGISTS' CORNER

MEGALOBLASTIC ANEMIA

II. Vitamin B₁₂ Metabolism and Deficiency*

*By CDR Dominick N. Pasquale, MC, USN, and CAPT Richard A. Burningham, MC, USN;
Hematology Branch, Medical Service, Naval Hospital, Philadelphia, Pa.*

Historical Background

The first full description of pernicious anemia is credited to Addison in 1855, although cases were recorded as early as 1823. In the 1870's Pepper and Cohnheim discovered the associated changes in the bone marrow and shortly thereafter, Ehrlich described the peripheral blood changes. Fenwick first suggested that the stomach was involved in 1880 and in 1887 Lichtheim described the central nervous system manifestations. The value of liver therapy was suggested early but it remained for Minot and Murphy to demonstrate this conclusively in 1926. Historically, then, this disease has been known for over a century and many important contributions were made soon after its recognition. However, in recent years, discoveries brought about by improved methods of study have added to the understanding of vitamin B₁₂ deficiency and metabolism.

*Part I, Folate Deficiency, appeared in U.S. NAVY MEDICINE, 58:1, 24-27, July 1971.

The opinions expressed herein are those of the authors and cannot be construed as reflecting the views of the Navy Department or of the naval service at large.

Metabolism

Vitamin B₁₂ is not synthesized by mammalian cells and must be absorbed from the food. Man's normal daily dietary intake of some 3-30 micrograms of this vitamin is in the form of animal protein. Less than 1 microgram is needed to maintain normal hematopoiesis and as little as 0.1 microgram daily may induce hematologic improvement in patients with pernicious anemia.⁽¹⁾

Vitamin B₁₂ absorption is dependent upon the gastric secretion of intrinsic factor which is produced by the parietal cells. It has been shown that the affinity of intrinsic factor for binding vitamin B₁₂ in an acid environment is greater than that of the food proteins.⁽²⁾ The mechanisms by which the intrinsic factor-B₁₂ complex is taken up by the specific receptors in the microvilli of the ileum have only been partially defined, but it is known that the uptake is dependent upon the presence of calcium and a pH above 5.8. Energy and oxygen were not felt to be required for this uptake, but recent experiments utilizing everted sacs of small intestine indicate that the movement of B₁₂ into mucosal cells is affected by anoxia and may be energy-dependent.⁽²⁾

Once B₁₂ moves across the mucosal cells, it is taken up by a beta globulin in the plasma called transcobalamin II (TC II) and is transported to the tissues. Transcobalamin I, an alpha globulin, also may bind B₁₂. It is thought that the latter complex is primarily a storage form.

The role of B₁₂ in intermediary metabolism is a complex one which has been only partly defined. It is known that the vitamin participates in the biosynthesis of methionine from homocysteine which also involves N⁵-methyl-tetrahydrofolates. This reaction generates tetrahydrofolate (FH₄) which is utilized in other metabolic reactions. One can readily see that a deficiency of B₁₂ may lead to a deficient production of tetrahydrofolate, thus affecting those reactions dependent upon this cofactor.

Initially, the finding of increased levels of methylmalonate in the urine of patients with B₁₂ deficiency was thought to explain the neurologic complications of the B₁₂ deficient state. Since methylmalonate is an intermediary product in the catabolism of a number of ketogenic compounds, it was postulated that this reaction was related to an apparent defect in myelin metabolism in B₁₂ deficiency. However, no correlation has been found to exist between the levels of methylmalonate and the presence, absence, or severity of the neurologic complications.⁽³⁾

In recent years elevated serum levels of vitamin B₁₂ have been correlated with certain disease states, specifically, the myeloproliferative disorders. Neutrophilic granulocytes have been shown to contain B₁₂-binding proteins and there is evidence that they may synthesize a portion of the serum B₁₂-binding proteins. Stenman showed that sonicates of normal neutrophils and chronic myelocytic leukemia neutrophils have a B₁₂-binding protein with a molecular weight, antigenic and functional properties similar to the serum alpha B₁₂-binder (TC I or transcobalamin I).⁽⁴⁾ The excellent correlation of the total blood granulocyte pool with the serum B₁₂-binding capacity has led to the suggestion that the serum unbound-B₁₂-binding capacity may be a useful index in determining the efficacy of chemotherapy for myeloproliferative disorders.⁽⁵⁾

Deficiency

Pernicious anemia has been reported as a disease primarily seen in the temperate zone among whites; however, it now appears that its rarity in Negroes has been overemphasized. The disease is much more common in late adult life, occurring most frequently after 40 years and increasing in frequency with age. There is no classical pattern of signs and symptoms. The patient may present a paucity of complaints with few findings, or

many complaints with diverse findings. If the deficiency is secondary to another disease, the principal symptoms and signs may be related to that disease and not the B₁₂ deficiency. The symptoms, signs, and laboratory findings are summarized in Tables I, II and III. It is important to remember that the morphological features in the peripheral blood and bone marrow are identical in both folate and B₁₂ deficient states.

TABLE I.—SYMPTOMS⁽¹⁾

1. *Nonspecific Symptoms of Anemia:*

Easy fatigability
Weakness
Headache
Palpitations
Syncope
Anorexia

2. *Symptoms Suggestive of B₁₂ Deficiency in Anemia Patients:*

Forgetfulness, Irritability
Decreased ability to perform simple mathematical calculations
Paranoid ideation
Depression
Sore tongue
Paresthesias
Difficulty walking
Diarrhea, Constipation

One should suspect the diagnosis of vitamin B₁₂ deficiency in the anemic patient with evidence of megaloblastic maturation and/or compatible signs and symptoms. The diagnosis can be confirmed by measuring the B₁₂ levels. On rare occasions when the situation is life-threatening, both B₁₂ and folic acid may have to be given along with packed cells. In most instances, a therapeutic trial of 50 micrograms of folic acid I.M. for ten days with reticulocyte monitoring, followed by 1 microgram of vitamin B₁₂ I.M. for ten days again with reticulocyte monitoring, will allow one to differentiate between folate deficiency and B₁₂ deficiency. Administration of folic acid even at that dosage may lead to a slight reticulocytosis in the face of B₁₂ deficiency but the tremendous degree of reticulocytosis associated with the trial of B₁₂ therapy serves to identify the specific deficiency. Herbert has outlined the clinical conditions which lead to vitamin B₁₂ deficiency.⁽⁶⁾ These disorders may be grouped into three major categories:

A. *Inadequate ingestion* — This is rare in the United States since the diet is seldom devoid of

animal products.

B. *Impaired small bowel absorption* — Since the site of B₁₂ absorption is the ileum, any disease of the small bowel which involves the ileum may result in B₁₂ deficiency. Tropical sprue, ileitis, and lymphoma are the most common. Coexistent pernicious anemia with a specific small bowel malabsorption defect has been reported.⁽⁷⁾ The small bowel absorption defect was corrected in four out of five cases treated with vitamin B₁₂, suggesting that the defect was secondary to B₁₂ deficiency. The intrinsic factor activity apparently did not return to the gastric juice after B₁₂ therapy. Colchicine and para-aminosalicylic acid therapy have been associated with B₁₂ malabsorption.

C. *Lack of intrinsic factor* — This defect is now known to result from a variety of causes, the predominant one being gastric atrophy in the adult. A family history of pernicious anemia is present in a high percentage of cases.

Immunological factors have been thought to play a role in pernicious anemia for a long time. In recent years many findings have supported this view but two seem most important:

1. There is a high incidence of pernicious anemia in patients with autoimmune-type thyroid disease.
2. The histology of the gastric mucosa in pernicious anemia is characterized by atrophy of the specialized cells of the body of the stomach and this is accompanied by lymphocyte infiltration.

Seventy-five percent of patients with pernicious anemia were found to have in their sera a gamma globulin specific for an extract of the mucosa from the body of the human stomach. Immunofluorescence has shown this antibody to be specific for the cytoplasm of the

TABLE II.

SIGNS SUGGESTIVE OF B₁₂ DEFICIENCY⁽¹⁾

Lemon-yellow cast of skin (pallor plus icterus)
Fever
Smooth tongue
Postural hypotension
Hepatomegaly
Splenomegaly
Increased pigmentation
Neurologic dysfunction

- a. Impaired mentation, delirium, paranoia
- b. Impaired vibratory sensation
- c. Impaired position sense
- d. Hyporeflexia, hyperreflexia
- e. Ataxia, spastic gait

TABLE III.

LABORATORY FINDINGS⁽¹⁾

1. Macrocytic anemia (MCV > 100 cu. micra)
2. Hypersegmented neutrophils in peripheral blood
3. Leukopenia
4. Thrombocytopenia especially in severe anemia
5. Low serum vitamin B₁₂ level (< 100 picogm./ml.)
6. Elevated serum folate (in 20-35% of patients)
7. Elevated serum lactate dehydrogenase activity
8. Formiminoglutamic aciduria
9. Methylmalonic aciduria
10. Hyperbilirubinemia
11. Increased fecal stercobilin
12. Elevated plasma iron, with increased saturation of transferrin
13. Accelerated plasma iron clearance, but impaired iron utilization by erythrocytes
14. Achylia gastrica
15. Absent intrinsic factor by in vitro assay of gastric juice

gastric parietal cell.⁽⁸⁾ Schwartz has found an intrinsic factor inhibiting substance in the sera of 36 out of a total of 91 pernicious anemia patients and in none of 39 controls.⁽⁹⁾ In Irvine's series, 73% of the cases of pernicious anemia possess antibody to parietal cells and 55% possess antibody to intrinsic factor.⁽⁸⁾ The presence of gastric parietal cell antibody in the serum is almost invariably associated with a reduction in acid secretion. There is also an associated reduction in the number of parietal cells and an increase in the lymphocyte infiltration.

According to Te Velde et al., the development of parietal cell antibody is controlled by a dominant autosomal gene.⁽¹⁰⁾ This is responsible for the processes leading to atrophic gastritis, achlorhydria, and impairment of B₁₂ absorption. Complete expression of this gene leads to the complete disease, whereas incomplete expression results in the asymptomatic relatives.

Therapy

Therapy of pernicious anemia is rather simple: 50-100 micrograms of vitamin B₁₂ daily I.M. for seven days is quite effective in promoting hematologic recovery. Maintenance therapy with 100 micrograms of vitamin B₁₂ I.M. monthly suffices. One must remember that certain disease states such as carcinoma, renal disease, active infection, or chronic alcohol intake may hinder the response to therapy.

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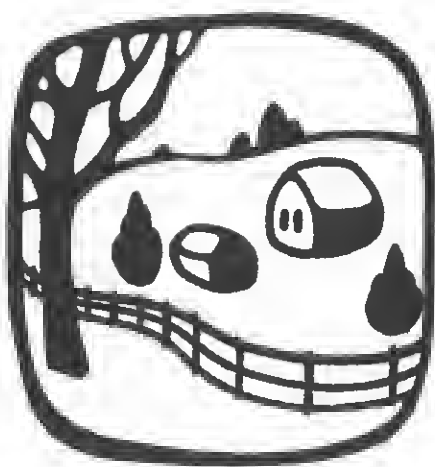
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"IN THIS CORNER"

The monograph by CDR Pasquale and CAPT Burningham entitled "Megaloblastic Anemia" which

appears in this issue of U.S. NAVY MEDICINE represents the beginning of the third year for publication of original articles from the Internal Medicine Service at the Naval Hospital, Philadelphia, Pa. The initial purpose of this series was to bring to the Navy medical community a series of seminars or teaching conferences which were being presented in the training programs at this hospital. As such, the series began with the "Gastroenterologists' Corner" and quickly grew to include the Hematologists, and more recently the Cardiologists, each with their own "Corner" of the journal. It has remained our sincere desire to have these articles function as informative teaching aids to Navy physicians world-wide with the hope that they will derive the same value from reading these manuscripts as we hope our residents and fellows-in-training derive from the original teaching seminars. As one of the originators of this concept I am pleased to see the growing interest in an academic exercise of this sort and would encourage teachers in the other naval hospitals to contribute their thoughts and original articles of this same nature to the journal. Since there is a great degree of teacher in all physicians I am sure that many of the readers can share my personal pleasure in the continued interest in these teaching seminars and my own sincere hope that they are providing a worthwhile service to Navy physicians in general.

*Medical Corps and Gastroenterology Editor,
CDR Donald O. Castell, MC, USN;
Director, GI Training Branch,
Internal Medicine Service,
Naval Hospital
Philadelphia, Pa. ☞*



Plaque Control Aircraft Carrier Style



By LCDR J.P. Luton, DC, USN; USS LEXINGTON (CVT-16),
Naval Air Station, Pensacola, Fla.

A 14-month experience with a plaque control program aboard the training aircraft carrier USS LEXINGTON (CVT-16) permits this modest presentation of informal observations. Clinical follow-up of those patients who have presented themselves for dental treatment forms the basis for this commentary, which might be of interest to other dental officers who are instituting similar programs.

Until such time as standard programs evolve, a multitude of approaches must be employed to educate and motivate patients in applying plaque control measures. The program will not perpetuate itself. Constant enthusiasm must be maintained and new ideas should be generated. Time must be spent in organizing and maintaining an effective program; spare time never materializes. The dental officer must devote considerable time and energy to coordinate the preventive dentistry program. Personal contact with, and pressure on key personnel aboard ship are required to achieve proper motivation for good plaque control procedures. Support should begin at the commanding officer level. All dental personnel must be educated and motivated to care for their own mouths, and to transmit genuine enthusiasm to their patients. A highly motivated petty officer is essential to assist the dental officer and coordinate preventive efforts.

Cooperation of the ship's store officer is vital if an unlimited supply of suitable dental items is to be made readily available to the crew. Basic items such as toothbrushes, dental floss, and an approved fluoride toothpaste come first. Other cleansing and dental items can then be stocked later as additional inducements.

Patients require motivation, education, specific plaque control instructions, and prophylaxis preceding surgery or restorative work. They should be seen in the preventive dentistry unit before reporting to the dental officer for routine treatment, since the ultimate success and efficiency of routine dental treatment are tremendously enhanced by faithful application of preventive measures. Dental technicians must see patients as many times as it becomes necessary to accomplish plaque control and relief of gingivitis. Advanced cases of gingivitis or periodontitis should, of course, be seen by the dental officer. A trained technician should provide the maximum extent of home-care instructions possible; this education must be reinforced by the dental officer at subsequent visits.

Maximum use of disclosing tablets or other appropriate liquid dyes should be made. Every patient should have his teeth stained when he reports for prophylaxis, and several times during the course of his treatment. This is a highly satisfactory method of revealing bacterial plaque.



Preventive Dentistry Operatory exhibits display of visual aids for patient education and motivation.





Display of visual aids located in reception room of the dental department.



Visual aids display used at indoctrination presentation.



LCDR J.P. Luton gives preventive dentistry presentation to newly reporting personnel.





DT1 Fillmore (foreground), DN Kirks, and DN Nesbitt assemble dental health booklet for patient distribution.

A more vivid and comprehensible demonstration of the relationship between plaque and dental disease should be offered in classroom presentations. Visual aids which may be helpful include: slides, movies, contrast phase microscope, dental health booklet, disposable mirrors, plaster models, etc. Emphasis should be placed on education and motivation. The patient must understand that he needs to be involved in his own treatment, that prophylaxis every six months will not prevent periodontal disease and dental caries although it is an integral phase of the treatment.

During the past 14 months, the following measures have been taken aboard the USS LEXINGTON as part of the Plaque Control Program.

- 1) Support for the program has been obtained from the Commanding and Executive Officers, department heads and other key personnel.
- 2) Individual attention has been given to patients who presented themselves for treatment.
- 3) Lectures have been provided for large groups, with emphasis placed on education, motivation, and plaque control procedures.
- 4) Demonstrations and/or displays have been placed in prominent locations aboard ship. Posters and literature have appeared throughout the ship.
- 5) Promotion of preventive dentistry has been

obtained throughout the ship's store.

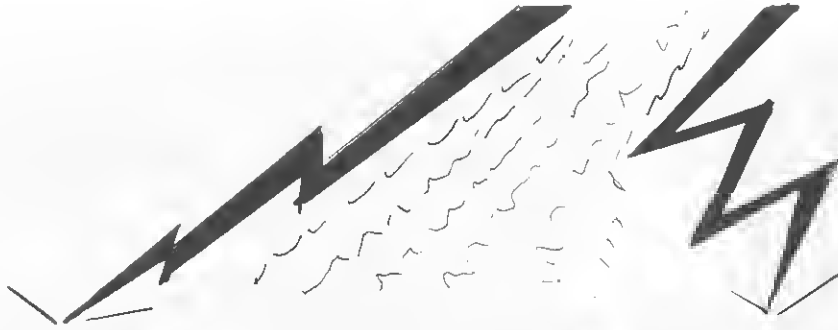
- 6) The Plan-of-the-Day has carried notes on dental health on a continual basis. For patient use, these notes were consolidated into a booklet entitled "Did You Know?"

- 7) A large brown envelope containing the booklet, Dentotape, disposable mirror and red disclosing tablets is issued to patients as a preventive dentistry kit.

- 8) As many personnel as possible have received stannous fluoride applications to the teeth. Navy Periodontal Disease Index and Navy Plaque Index NAVMED 6600/4 have been utilized on annual physical exams, as directed by 8UMED.

- 9) The Periodontic Syllabus has been most useful and several excellent items listed therein have been employed.

Our preventive dentistry effort has led to improved control of plaque formation and reduction of gingivitis and dental decay noted on clinical follow-up of patients. Encouraged by this trend, we are making every effort to promote a plaque control program consistent with the current policies and directives of the Navy Dental Corps. Except for emergency dental treatment which receives first priority, plaque control is viewed as our number one mission in the prevention and treatment of all dental disease. ☸



By LCDR J.W. Liming, MSC, USN; Fleet and Marine Corps Medical Support Division (Code 49), Bureau of Medicine and Surgery; Washington, D.C.

As a result of the current lack of hospital ships and other noncombatant medical and dental facilities to support amphibious warfare, BUMED has initiated a program to expand the medical and dental facilities in

combat ships with a casualty receiving and treatment mission. Unlike AH class (Hospital) ships, the Amphibious Warfare Ships cannot display and rely on a red cross for protection in combat situations. One of



Test Five — Detonation of equivalent 90 pounds TNT, 25 feet from floating shock barge, in shock testing of medical/dental equipment.



Sterilizer after Test Two. Cabinet is distorted because steam chamber has broken loose from mounts and is lifted several inches.



General arrangement of medical and dental equipment inside floating shock barge.

the most formidable threats is related to shock resistance to noncontact underwater explosions resulting from near misses by enemy-delivered weapons.

None of the present shipboard medical and dental equipment is protected against shock and vibration hazards. Shock-hardened medical and dental equipment is not available from civilian industry or the Defense Supply Agency and due to the limited demand, civilian industry has demonstrated little interest in providing this type of equipment. BUMED has therefore initiated an R&D project with the Naval Ship Research and Development Center in Washington, D.C., to develop design and installation standards for essential medical equipment such as operating room lights, operating tables, X-ray machines, blood bank facilities, and other such items essential to lifesaving surgical capability.

The initial effort to shock harden and expand medical and dental facilities in combat ships is being implemented in the General Purpose Amphibious Assault Ships (LHA's) currently under construction by Litton Industries and scheduled for delivery to the fleet in 1974. These ships will contain four major operating rooms, two 300 MA X-ray rooms and other medical and dental equipment and facilities necessary for providing extensive medical and dental care to 300 combat casualties.

Twenty-six items of medical and dental equipment, considered vital to hospital functions, have been selected for shock hardening on the LHA type ships. To date six tests have been conducted on this equipment at the Naval Shipyard, Portsmouth, Va., by the Naval Ship Research and Development Center, Washington, D.C. The objective of the program is to shock harden these items so that: they will continue to function, no portion of the equipment will come adrift, and no portion of the equipment will become hazardous for personnel during and following exposure to underwater blast.

The test procedure involves loading the equipment on a floating barge and setting off an underwater explosion, simulating expected combat conditions. Prior to each test, the equipment is analyzed to determine basic weaknesses. After weak points are identified, equipment is redesigned or fixation devices are applied in the form of braces, brackets, straps, etc.

DTCM R.F. Barton, USN from the Naval Dental Clinic, Norfolk, Va., and HMC G.R. Willow, USN from the Naval Dispensary, Norfolk, have assisted greatly during these tests in the repair and installation of items being tested. As a result of these tests, essential medical and dental equipment will be qualified to survive and function following subjection to severe conditions of stress from underwater blasts. ☛



To the Editor: CDR McDermott's letter, published in the October 1971 issue of U.S. NAVY MEDICINE, raises the dilemma confronting most physicians when they enter into military service. Nothing in this physician's training has prepared him for military life, nor even for those aspects of medical practice peculiar to the military situation. After the briefest of indoctrinations and donning of the uniform this physician is assigned to duty, commissioned only by virtue of the "M.D." following his name.

What, then, is the position of the doctor in the military? Certainly he wears the uniform and is subject to the regulations. CDR McDermott states we are military officers first and physicians second. Many of us take emphatic exception to this attitude. I have yet to have this relationship unambiguously spelled out. I suspect there is a state of flux, but when performing as a physician one is first and foremost a doctor. It appears to me that most service physicians want to practice medicine and that most recipients of our care want good medical practice.

Military medicine has been caught up in the general mood of defensiveness of posture sweeping through the military today. Yet we have an excellent model of government-supported medical care. We can provide a very good quality of care and lead a professionally rewarding life in this system. We suffer from deficiencies in facilities, funds, and personnel. We suffer more when the personnel we have are demoralized through their dissatisfaction with draft-obligated service.

If we continue in a defensive posture and if we move away from draft-produced manpower sources, those in charge of military medicine are going to have to clarify the position of the doctor in the military. If the emphasis is firstly to be "military" as CDR McDermott suggests, I fear the military medical services

will be headed by those career "captains" and "commanders" whose staffs are comprised of short-term and continually resigning "doctors."

LCDR David O. Haugland, MC, USN
Naval Hospital, Annapolis, Md.

To the Editor: I am directing this letter to the "confusion in priorities" mentioned in the letter by CDR McDermott in the October 1971 issue of U.S. NAVY MEDICINE.

A few of us recognize the potential of the dual career of Naval officer and physician and many are ready to assume the qualities of leadership expected of a Naval officer. However, I feel that it is unfair to expect a man trained for a minimum of eight years as a physician, commissioned by the Navy as a professional Corps officer, and then given a two-week course on military courtesies and conduct, to consider himself primarily a Naval officer and secondarily a physician.

In this time in the history of the Navy Medical Corps when there is considerable concern over the retention of Medical Corps officers, I think we may all do well to reexamine our priorities and consider the wealth of a Navy Medical Corps officer as a physician for which reason he was commissioned, and in which area he can best serve the U.S. Navy.

LCDR T.J. Sullivan, MC, USN
Naval Hospital
Camp Pendleton, Calif.

To the Editor: Having served with Marine infantry battalions in Viet Nam, I was particularly interested in the November issue of U.S. NAVY MEDICINE.

However, I would like to comment on the article by LCDR John J. Bouvier entitled "Esprit and MAG-13."

I can well understand the author's pride in serving with the Marines and his admiration of the Marine esprit de corp. There must be very few Navy physicians who, having served with the Marines, do not share his feelings.

However, I do take exception to the patronizing attitude he displayed toward his fellow medical officers who served in Viet Nam. I'm certain that the "Some physicians," who "having previously led relatively sheltered lives in acquiring professional skill". . . and who then . . . "experienced marked mood swings. . . " while in Viet Nam would be interested in learning where the dauntless doctor acquired his medical skill, and to point out that their experiences in Viet Nam were as diverse as the units with which they served.

In all fairness, I believe that mood swings and depression would often characterize an appropriate response to what many Navy physicians experienced while serving with the Marines in Viet Nam.

LT Andrew C. Peterson, MC, USNR
924 Shorewood Drive
Bremerton, Wash. 9B310

Within the context of Dr. Bouvier's article, the sheltered life of professional training in any teaching center, military or civilian, is common to all of us wherever we may have acquired that training. The term "sheltered" is construed here to mean in an environment fortified by readily accessible teachers and

consultants in all conceivable subspecialties, unlimited technological resources and facilities, Grand Rounds, well-stocked medical libraries, and a reasonably steady, even flow of incoming patients. Let's admit it now, Dr. Peterson, few physicians had the benefit of such a medical utopia in Viet Nam. It was necessary to make an adjustment, was it not?

Dr. Bouvier suggests that some physicians adapted to the Viet Nam situation, by degrees or stages. Some of course adapted better than others. That observation would seem to be reasonable and consistent with prevailing comment. In rereading "Esprit and MAG-13," I am not impressed that Dr. Bouvier excludes himself from other physicians and their general reactions to Viet Nam. It would appear, rather, that he has recognized the human reactions of most young physicians to a difficult and unprecedented human experience.

It is curious how acutely uncomfortable we become when confronted with our own human proclivity to emotional and behavioral reactions. Imbued with the professional necessity for strong self-discipline, we feel a moral responsibility to set and maintain high standards of conduct. In the process, we become very exacting and place extremely high demands upon ourselves as individuals. A natural human reaction or inclination, acceptable in society generally, becomes personally unacceptable. We perceive as deprecatory or demeaning even a simple reference to our own human impulse or behavior. Communication is impeded by this professional sensitivity which is common to all of us. If we are to function effectively in this rapidly changing and exciting world, we as physicians must heal ourselves. ☸

Unfortunately, the supply of U.S. NAVY MEDICINE publications is limited. No Hospital Corpsmen, and only a limited number of Nurse Corps officers normally receive individual copies. Please don't throw away your copy — pass it along to other members of the Navy Medical Department family who fail to receive it. Be sure your nurses and corpsmen get to see this periodical which often contains information of interest to them. ☸



INSERVICE RESIDENCY SABBATICAL PROGRAM

The Inservice Residency Sabbatical Program was established in 1970 to offer as an incentive to outstanding senior residents the opportunity to visit a medical education institution of their own choosing under Navy sponsorship on a Temporary Additional Duty Basis. The following residents have been approved for participation in the Inservice Residency Sabbatical Program during Fiscal Year 1972 in accordance with the provisions of BUMEDINST 1520.16A of 27 May 1971:

NAME	SPECIALTY	LOCATION OF SABBATICAL
Amis, Edward S., Jr. LCDR, MC, USN	Urology	Memorial Hospital for Cancer and Allied Diseases, New York
Amundsen, Duane G. LCDR, MC, USN	Surgery	Pasadena Tumor Institute, Pasadena, Calif.
Beal, Lowell R. LCDR, MC, USN	Internal Medicine	School of Public Health and Tropical Medicine, Tulane University, New Orleans, La.
Chalamidas, Stewart L. LCDR, MC, USN	Dermatology	Lahey Clinic, Boston, Mass.
Evertson, Larry R. LCDR, MC, USN	OB/GYN	University of Southern Calif- ornia at Los Angeles, Calif.
Fowler, Donald R. CDR, MC, USN	Surgery	Texas Heart Institute of St. Luke's and Texas Children's Hospitals, Houston, Tex.
Golden, Richard A. LCDR, MC, USN	Psychiatry	Naval Drug Rehabilitation Center Miramar, Calif.
Goldschmidt, Mark N. LCDR, MC, USN	Pediatrics	University of Colorado Medical Center, Denver, Col.

NAME	SPECIALTY	LOCATION OF SABBATICAL
Jakubowski, Michael S. LT, MC, USNR	Anesthesiology	College of Physicians and Surgeons of Columbia University, New York City, N.Y.
Keegan, Gerald T. LCDR, MC, USN	Urology	Armed Forces Institute of Pathology, Washington, D.C.
Koenig, Harold M. LCDR, MC, USN	Pediatrics	Yale University Medical School, New Haven, Conn.
Lange, Thomas A. LCDR, MC, USNR	Orthopedic Surgery	Department of Rheumatology, New York Hospital, New York City, N.Y.
Lee, Wayland S. LCDR, MC, USN	Otolaryngology	University of California Medical Center, San Francisco, Calif.
Marnell, Daniel J. LCDR, MC, USN	Dermatology	Department of Dermatology of the Mayo Clinic, Rochester, Minn.
Martinson, Alice M. LCDR, MC, USN	Orthopedic Surgery	Rancho Los Amigos Hospital, Downey, Calif.
McAlary, Brian G. LCDR, MC, USN	Anesthesiology	University of Miami Medical School, Miami, Fla.
McConnel, Charles S. LCDR, MC, USN	Otolaryngology	Tampa General Hospital, Tampa, Fla.
McCormick, Timothy M. LCDR, MC, USN	Urology	University of California, San Francisco, Calif.
Nelson, Fred R. LCDR, MC, USN	Orthopedic Surgery	Mayo Clinic, Rochester, Minn.
Paul, Theodore O. LCDR, MC, USN	Ophthalmology	Smith-Kettlewell Institute of Visual Sciences, Presbyterian Medical Center, San Francisco, Calif.
Przybylski, John L. LCDR, MC, USNR	Internal Medicine	Massachusetts General Hospital, Boston, Mass.
Reed, James C. LCDR, MC, USN	Radiology	Children's Hospital Medical Center, Oakland, Calif.
Schweitzer, Robert L. LCDR, MC, USN	OB/GYN	Department of Radiotherapy, New England Medical Center, Tufts Medical School, Boston, Mass.
Smart, Robert H. LCDR, MC, USN	Urology	University of California School of Medicine at Los Angeles, Calif.

NAME	SPECIALTY	LOCATION OF SABBATICAL
Snyder, John M. LT, MC, USN	Anesthesiology	Respiratory Care Unit of the Massachusetts General Hospital, Boston, Mass.
Suvari, Agu LCDR, MC, USN	Internal Medicine	Roswell Park Memorial Institute in Buffalo, N.Y.
Welham, Richard T. LCDR, MC, USN	OB/GYN	Department of Obstetrics and Gynecology at the Duke University Medical Center, Durham, N.C.
Williams, Paul F. LCDR, MC, USN	OB/GYN	Armed Forces Institute of Pathology, Washington, D.C.

(Courtesy of Code 3161, BUMED.) ㊦

TROPICAL AND INTERNATIONAL MEDICINE GORGAS MEMORIAL LABORATORY PANAMA CITY, REPUBLIC OF PANAMA

On 30 January 1970 the Bureau of Medicine and Surgery began conducting a course in Tropical and International Medicine at the Gorgas Memorial Laboratories, Panama City, Republic of Panama. Few clinicians in the United States have had the opportunity during their training to diagnose and treat diseases found primarily in tropical zones. With the presence of U.S. military personnel in tropical areas throughout the world it is particularly important that military physicians who specialize in certain fields such as Dermatology, Family Practice, Internal Medicine, Pathology, Pediatrics, and related subspecialties be afforded an opportunity to gain intensive experience in the prompt diagnosis, and proper treatment of

tropical diseases.

Most laboratories in the tropics are primarily concerned with basic research. Physicians who study there see patients only during acute illness phases on a very limited basis. However, the Gorgas Memorial Laboratory, with its unique and longstanding association with adjoining Panamanian hospitals and patients in small villages in the country's interior plus its well known clinic, provides an unusual opportunity for a training program for clinicians.

Since the first course in April 1970, others have been conducted and the following Naval Medical Corps officers have taken advantage of this unique professional opportunity.

NAME	SPECIALTY
LCDR R.G. Addison, MC, USN	Pathology
LCDR Lowell R. Beal, MC, USN	Internal Medicine
LCDR H.S. Berg, MC, USN	Pathology
LCDR Clive R. Charles, MC, USN	Dermatology
LCDR D.L. Cooper, MC, USN	Dermatology
LCDR L. Crane, MC, USN	Internal Medicine
LCDR R.L. Donnell, MC, USN	Internal Medicine
CDR Wilmont S. Draper, MC, USN	Dermatology
LCDR Ronald Gaskins, MC, USN	Gastroenterology
LCDR William J. Godfrey, MC, USNR	Internal Medicine
LCDR W.O. Harrison, MC, USN	Internal Medicine
LCDR G.F. Kellogg, MC, USN	Internal Medicine
LCDR S.P. Lavarias, MC, USN	Internal Medicine

NAME	SPECIALTY
LCDR R.B. Lewis, MC, USN	Internal Medicine
LCDR Thomas Lohner, MC, USN	Pediatrics
CAPT R.H. Mitchell, MC, USN	Dermatology
LCDR Malcolm Murdock, MC, USN	Pathology
LCDR Otto Nebel, MC, USN	Internal Medicine
CDR R.W. Poley, MC, USN	Pathology
LT John C. Pollard, MC, USN	Pediatrics
LCDR N.D. Pryor, MC, USN	Pediatrics
LCDR Charles N. Reed, MC, USN	Pediatrics
LCDR William J. Reed, MC, USN	Pediatrics
LCDR L.V. Staker, MC, USN	Internal Medicine
LCDR E. Strout, MC, USN	Pathology
LCDR A. Tamara, MC, USN	Pathology
CDR A.A. Urbanc, MC, USN	Dermatology.

Active duty Medical Corps officers who desire to attend this six-week course during Fiscal Year 1973 should submit their requests via their commanding officers to reach BUMED (Code 316) before 15 June 1972. 🇺🇸

HIGHLIGHTS OF GORGAS MEMORIAL INSTITUTE MEETINGS

The Gorgas Memorial Institute of Tropical and Preventive Medicine, Incorporated, held its 48th annual meetings in Washington, D.C. on 1 Sept. 1971, at the Medical Society of the District of Columbia building. The Institute is the nonprofit, parent organization of the Gorgas Memorial Laboratory (GML), located in the Republic of Panama. The Laboratory has conducted biomedical research since its establishment in 1929. It is a living memorial, envisioned by former President of Panama, Dr. Belisario Porras, in recognition of the work and accomplishments of Major General William Crawford Gorgas in the fields of sanitation and tropical health.

The Honorable Maurice H. Thatcher, author of the original Act establishing the Gorgas Memorial Laboratory, was elected Honorary President of the Corporation for life "in recognition of over 40 years of devotion to the creation and development of the Gorgas Memorial Laboratory."

The new members elected by the Corporation to the Board of Directors were the Honorable Carl Albert, Speaker of the House of Representatives; the Honorable Tim Lee Carter, physician, Congressman from Kentucky; and James W. Watts, M.D., Professor Emeritus of Neurological Surgery, The George Washington University Medical Center. The Board reelected RADM Calvin B. Galloway, MC, USN (Ret.) as President for another one-year term, together with current

officers.

The scientific program included a report by Martin D. Young, Sc.D., Director of the Laboratory, who reviewed the research activities during the past year and a report by Pedro Galindo, M.S., Chief of GML's Virology Department, on Venezuelan Equine Encephalitis at the Laboratory. Dr. Martin M. Cummings, Director of the National Library of Medicine and member of the Board of Directors of the Institute, spoke on the concept of regional medical libraries. The Institute contemplates as one of its future activities the establishment of the Gorgas Memorial Regional Medical Library for Panama and Central America, on a plot of land ceded by the Republic of Panama. The following highlights of the scientific program are of interest.

Discovery of a Mosquito Vector and of New Hosts For Endemic Venezuelan Equine Encephalitis Viruses

Venezuelan Equine encephalitis virus (VEE) which has caused widespread outbreaks in horses and people of Latin America for some years recently invaded the U.S. for the first time. The disease occurs in two forms, the epidemic and the endemic. Recently, the first insect vector of the endemic type has been found. Pedro Galindo and Margaret Grayson, Gorgas Memorial Laboratory, Republic of Panama, working on the Chagres River in Panama found that *Culex (Melanoconion) aikenii* transmits the disease. This mosquito

has an unusual life habit of breeding in a floating water plant called "water lettuce." The insect spends most of its life on the water plant and flies to the nearby river bank to obtain blood meals from the wild animals. The viruses develop in the mosquito and are transmitted when the female mosquito takes another blood meal from the animals. This important discovery helps to explain the persistence of the virus in nature in constant non-epidemic form.

This represents the first time that mosquitoes of this group, long suspected of being involved in the transmission of endemic VEE, were proven to be vectors of the disease. Immediately following this discovery, intensive studies were initiated to investigate the biology of *C. aikenii*. This work led to the establishment of a prolific laboratory colony which is being widely used in transmission experiments with both endemic and epidemic strains of VEE virus. This also represents the first time that *Culex (Melanoconion)* mosquitoes have been used experimentally in the transmission of arboviruses.

Another important breakthrough on VEE research obtained during the year, was the experimental transmission of endemic VEE virus from herons, which have been found naturally infected, to rodents through the mosquitoes *Culex aikenii* and *Deinocerites pseudes*, natural vectors of endemic and epidemic VEE, respectively. The latter species was involved in the recent Texas epidemic. This is the first time that a natural avian host of the virus has been shown to be capable of serving as a source of VEE to infect natural vector mosquitoes. During this work it was demonstrated that these two insects are very efficient vectors, being capable of becoming infected by ingesting blood of vertebrates with relatively low concentration of virus.

A collaborative project is now in progress with the Middle America Research Unit, a field unit of the National Institutes of Health in the Canal Zone, and the Department of Agriculture of Panama. This program is aimed at investigating the capabilities of *C. aikenii*, *D. pseudes* and *Mansonia* mosquitoes to transmit both endemic and epidemic strains of VEE virus, using horses with different viral concentrations in the blood as the source of infection for the mosquitoes. Some of the answers being sought are: the differences between the epidemic and endemic types of VEE; whether one type can change to the other, either in the horse or wild animal; and whether the endemic will protect against infections with the epidemic type.

The finding that VEE in herons can be transmitted by mosquitoes to other animals is of epidemiological importance. The presence of this disease in birds,

especially those which are migratory, should help to explain the dissemination of VEE from one country to another according to Pedro Galindo, Chief of GML's Virology Dept.

Human Malarias In Monkeys

Until recently, it was thought that human malaria would grow only in humans and not in monkeys. In 1965, scientists of the GML in Panama demonstrated that human malaria could be grown in the small night or owl monkey (*Aotus trivirgatus*). This monkey is now being used in research on malaria in Panama and in other research centers, such as the Walter Reed Army Institute of Research.

The GML scientists have now found that other small Panamanian monkeys are also receptive to human malaria parasites, especially if the human malaria has been first passed through the *Aotus* monkey. During the past year it was demonstrated that the squirrel monkey (*Saimiri sciureus*) can be infected with human malaria either by the injection of infected blood or the bite of the mosquito. This brings to a total of six the different species of Panama monkeys which can develop one or both of the two most important human parasites (*P. vivax* and *P. falciparum*).

The experimental use of monkeys would add much knowledge to the biology of the malaria parasites. This model should be very useful in the testing and development of new antimalarial drugs, Dr. Young commented.

House Rats Found Useful In Studying Chagas' Disease

Scientists at the GML have shown that the common house rat in tropical countries, *Rattus rattus*, has a high rate of infection with *Trypanosoma cruzi*. It has now been found that this rat is useful in the laboratory as an experimental model in studying the disease. Many of the manifestations in the rat are similar to those occurring in man. The heart is variously affected often showing enlargement and changes in the communication system resulting in irregular heart beats.

These blood parasites are transmitted from the rat to man by kissing bugs which live in or near houses. Kissing bugs (or South America bed bugs) often bite around the lips or eyes of the sleeping human victims. As both the rats and kissing bugs may live in the same habitation, literally within a few feet of the human inhabitants, it is very easy for sleeping humans to be bitten by the bug and thereby contract the disease. PAO — Gorgas Memorial Institute of Tropical and Preventive Medicine, Inc., Washington, D.C. ☘

NAVAL RENAL TRANSPLANT CONFERENCE

On November 17-19, a conference was held at the National Naval Medical Center (NNMC), Bethesda, to outline the proposed Naval Renal Transplantation Program. The conference was attended by some 27 nominees, including internists, pediatricians, and urologists, representing most of the major naval installations in the U.S. The purposes of the conference were:

(a) To provide most recent information regarding clinical renal transplantation, including some foundation in basic immunology;

(b) To emphasize the clinical and research capabilities available at the NNMC in the field of transplantation; and

(c) To engender a Navy-wide cooperative effort in establishing a renal transplant program at Bethesda.

Introductory speakers were RADM J.W. Albrightain, MC, USN, Deputy Surgeon General; CAPT Tor Richter, MC, USN, Commanding Officer Naval Medical Research Institute (NMRI); CAPT Donald Custis, MC, USN, Commanding Officer, Naval Hospital, Bethesda; and CAPT L.F. Miller, MC, USN, Director, Research Division, BUMED. Their remarks served as an historical

overview of the evolution of the Navy's role in tissue preservation and transplantation, and focused the renal transplantation program as part of the larger effort with its research, training and patient care aspects. RADM Albrightain emphasized the longstanding interest of the Surgeon General in transplantation programs, and urged enthusiastic support at all levels in making renal transplantation in the Naval hospital a reality.

The remainder of the first day was devoted to a realistic presentation of the current status of both the art and science of renal transplantation. One guest speaker, Dr. James Pierce, from the Medical College of Virginia, spoke on the immunologic problems of retransplantation provided by their experience at Richmond.

The second day of the conference was utilized in presenting the immunologic and experimental aspects of transplantation. Speakers from both the Naval Medical Research Institute and Walter Reed Army Hospital discussed concepts in the area of immunosuppression, tissue typing, renal perfusion and xenobanking. In addition, data from the preclinical testing trials of ALG produced by Bethesda were presented. Plans for future clinical use of ALS in a national testing program with the cooperation of the National Institutes



RADM J.W. Albrightain, MC, USN, Deputy Surgeon General.



RADM F.P. Ballenger, MC, USN,
CO NNMC.



CAPT K.W. Sell, MC, USN;
NMRI, NNMC, Bethesda.



LCDR J.W. Carty, MC, USNR (left foreground), Nav Hosp Portsmouth, Va.; James Pierce, M.D. (center); and CAPT T. Richter, MC, USN (right foreground), CO NMRI.



LCDR T.A. Love, MC, USNR (left), Nav Hosp Boston, Chelsea, Mass.; and LCDR T.C. Nicholson, MC, USN (right), Nav Hosp San Diego, Calif.



LCDR R.S. Filo, MC, USN (center), NMRI; and LCDR J.N. Woody, MC, USNR (right), NMRI.

of Health were outlined. It is hoped that a more definitive answer regarding the efficacy of ALG in immunosuppression for transplantation will come from these studies.

The final day of the conference was spent discussing the practical aspects of a Navy-wide dialysis and transplantation program. There was much emphasis on patient and donor selection, evaluation, and care.

The establishment of a Renal Failure Registry at Bethesda was proposed. During the workshop portion, several patients and problems were presented and the details of proper screening evaluation, tissue typing, and transfer were considered. Discussion seemed to indicate an interest and concern, by all those participating in the program, for the program's success. — LCDR Ronald S. Filo, MC, USN; Naval Medical Research Institute, NNMCI, Bethesda, Md. 🌿

THIRD ANNUAL SPRING SYMPOSIUM 18 – 19 MAY 1972

The Third Annual Spring Symposium will be held at Naval Hospital Boston, Chelsea, Mass., on Thursday and Friday 18 and 19 May 1972. The program will have as its theme "A Forward Look In Medicine." Separate sections are planned for medicine, dentistry, nursing, and administration. Physicians, dentists, nurses, and paramedical personnel, both civilian and military, are invited to attend and participate.

In keeping with the theme of the Symposium, the program will include those subjects in clinical medicine, dentistry, nursing and administration which are coming into use at the present time and appear to have strong potential for the future.

Persons desiring to participate are invited to submit abstracts, in duplicate, of not more than 50 words, not later than 15 March 1972 to:

CAPT J.M. Young, MC, USN;
Program Chairman,
Naval Hospital, Boston,
Chelsea, Mass. 02150.

A social event is planned for the evening of 19 May. Please plan to attend. 🌿

TESTS AND MEASUREMENTS IN CHEST DISEASE



Figure 1.

NAVY MEDICAL EXHIBITS CONTINUE TO SCORE

The BUMED-sponsored exhibit, "Tests and Measurements in Chest Disease," authored and monitored by CDR Ann Cherry Hatten, MSC, USN, was awarded First Place by the American Physical Therapy Association in the National Division for Education and Research in 1971. (See Figure 1) The award was presented to CDR Hatten during ceremonies following the House of Delegates meeting at the 50th Anniversary Conference of the American Physical Therapy Association held in Boston, Mass., 27 June through 2 July 1971. CDR Hatten is Head of the Physical Therapy Branch, Naval Hospital, NNMC, Bethesda, Md.

The exhibit was designed and engineered by Mr. Bruno Figallo and Mr. J.P. Samuels of the Exhibits Section of the Naval Medical School, Bethesda, Md. The slide-synchronized tape was narrated by Mr. E.R. Shappell, Education Specialist of the Naval Medical School. The exhibit, through transparencies and taped

narrative, presented a comparison of laboratory, roentgenographic, and physical tests and measurements in the normal and emphysematous chest.

The exhibits at the 50th Anniversary Conference were evaluated by a scientific exhibit awards committee of the American Physical Therapy Association. Criteria used by the evaluators in judging the scientific exhibits were: accuracy, validity, attractiveness, general appeal or interest, timeliness, originality of presentation, creativity, service to conferees, clarity of presentation, supporting materials for presentation, and usefulness.

This was the second consecutive year that BUMED, Department of the Navy, won this award. The BUMED-sponsored exhibit entitled "Gait Training with Abductor Braces," authored by LT Herta A. Weber, MSC, USN, won the award in 1970.

The Billings Bronze Award, one of six top awards presented at the Scientific Exhibit of the American



Figure 2.

CDR A. Cherry Hatten, MSC, USN, holds the scientific exhibit award for First Place in the National Division for Education and Research presented at the 50th Anniversary Conference of the American Physical Therapy Association in Boston, Mass., for scientific exhibit entitled "Tests and Measurements in Chest Disease."



Figure 3.


Medical Association's annual convention went to the Naval Medical School, NMMC, Bethesda, Md., in 1971. "Cannabis," the Medical School's popular exhibit concerned with the marijuana plant, was one of 260 entries. (See Figure 3) CAPT D.H. Gaylor, MC, USN, Executive Officer of the Naval Medical School, was the technical director of the exhibit. He worked along with Mr. John P. Samuels and Mr. Bruno Figallo of the Illustrations and Exhibits Division of the Naval Medical School in producing "Cannabis."

The display features an experimental "pot" smoking session involving two subjects under the supervision of a physician. A continuously repeating eight-minute film shows the two subjects before, during, and after smoking five marijuana cigarettes. A sound track records the conversation of the participants throughout the course of the session and while under increasing degrees of marijuana influence.

The exhibit also won an award in 1971 at the American Dental Association meeting. It has been enthusiastically received at many professional conventions including those of the American College of Physicians, the Aerospace Medical Association, the

American Hospital Association, District of Columbia Medical Society, American Academy of General Practice, and the AMA Clinical Meeting.


LCDR A.G. Coran, Clinical Medical Sciences Dept., NMRI and CAPT R.L. Bernstine, MC, USN, of the Research Division, BUMED, won honorable mention for the scientific exhibit entitled "Fetal Surgical Techniques" at the 1971 Annual Meeting of the AMA in Atlantic City, N.J. The exhibit demonstrated various procedures used to operate upon dog and sheep fetuses in utero. The techniques were employed to study various aspects of fetal physiology and the results of these studies were shown in the exhibit.

The BUMED-sponsored scientific exhibit entitled "Neural Injury, Muscle Relaxants and Potassium" was awarded Second Prize at the Annual Meeting of the American Society of Anesthesiologists conducted 16-20 Oct 1971 in Atlanta, Ga. The exhibit was monitored by Senior Exhibitor CDR R.E. Tobey, MC, USN, NMRI. Co-exhibitors were: CDR J.B. Oldershaw and LCDR J.J. Angel of Naval Hospital, Great Lakes, Ill.; and LT R.J. Clubb and LT M.A. Dean, members of the staff at Naval Hospital Portsmouth, N.H. 

DOG BITE STATISTICS

In his WEEKLY LETTER TO THE MAYOR dated December 3, 1971, Robert E. Farber, M.D., the Commissioner of Health, Baltimore, Md., noted that so far in 1971 almost 7,000 animal bites have been reported, 93% of which were dog bites. The number of animal bite reports have continued to rise in recent years and have doubled since 1959.

In a study of reported animal bites, Dr. David R. Berzon, Public Health Veterinarian in the City Health Department, analyzed the records to determine if the different dog breed populations in the city have any relation to the increasing number of bites. His investigation revealed that two-thirds of all dogs licensed in Baltimore are purebred; the remaining one-third are crossbreeds. Possibly because crossbreeds are more likely to be allowed to roam the streets unattended by their owners, about 45% of all dog bites are inflicted by crossbreeds.

"The study also showed that of the pure-breed dogs in Baltimore 29% are German shepherds, 10% poodles, 6% beagles, 5% collies, and 4% cocker spaniels. However, 64% of bites caused by purebred dogs are by German shepherds. This may be compared with 4% bites by poodles, 3% by collies, 2.5% by cocker spaniels, and fewer than 2% by beagles. It is evident, therefore, that German shepherds greatly outnumber other breeds in Baltimore although nationally, according to the American Kennel Club, they account for less than 10% of the dog population." People who choose to own a German shepherd are more likely to have their pet bite someone than owners of any other breed, on the basis of this study. 

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United States Navy Medicine

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CAPT Frank Austin (left), COMNAVAIRLANT, Force Medical Officer, talks with LCDR Ron Symonds, LEXINGTON's Medical Officer, in front of LEX's visual testing equipment. CAPT Austin was on board LEXINGTON, the Navy's only Training Carrier, to appraise the medical facilities which he found to be "excellent."

U.S. NAVY MEDICINE